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Implementing Integrated Surveillance of Respiratory Viruses in Belgium

State of affairs in October 2022

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Session 3: Integrated Respiratory Virus Surveillance:

Panel 1 "Monitoring virus activity"

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Integrating surveillances for respiratory viruses in Belgium

- **3 existing sentinel clinical surveillances**
  - ILI surveillance in sentinel network of GPs, ILI surveillance in sentinel network of nursing homes (pilot), SARI surveillance sentinel network of hospitals
  - clinical data (in subgroup (ILI) or all (SARI) patients meeting ILI / ARI / SARI case definition
  - + collection of nasopharyngeal swab and more detailed clinical data (in subgroup (ILI) or all (SARI) patients
  - Samples were tested by NRC Influenza on influenza + multiplex of respiratory viruses

- **Integration process**
  1. Adapting the content of the existing sentinel surveillances
  2. Increasing the number of sentinel sites
  3. Integrating the existing sentinel networks and non-sentinel COVID-19 surveillances

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Integration process: content of the surveillances

1. Adapting the content of the existing sentinel surveillances

   - All samples are also tested for SARS-CoV-2 since March 2020
   - COVID-19 specific symptoms, complications and vaccination status were added to the questionnaires
   - Also ARI patients (respiratory symptoms other than ILI) are swabbed and tested by the sentinel GPs
   - Year-round SARI surveillance instead of January-April
   - All SARS-CoV-2 infections are sequenced (WGS), will also be done for influenza and RSV infections

2. Increasing the number of sentinel sites

3. Integrating the existing sentinel networks and non-sentinel COVID-19 surveillances

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Integration process:
Increasing the number of sentinel sites

1. Adapting the content of the existing sentinel surveillances

2. Increasing the number of sentinel sites

   - Sentinel GPs:
     - Survey
     - Reach out in GP-friendly ways: lunch webinars, videos to see at their own time
   - Sentinel hospitals:
     - Open call, but with geographical representativeness indicator based on denominator estimation as extra selection criterion
     - Budget for full-time study coordinator per hospital available
   - Sentinel nursing homes: ?

3. Integrating the existing sentinel networks and non-sentinel COVID-19 surveillances

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Integration process:
Integrating existing sentinel and new non-sentinel COVID-19 surveillances

1. Adapting the content of the existing sentinel surveillances

2. Increasing the number of sentinel sites

3. Integrating the existing sentinel networks and non-sentinel COVID-19 surveillances

   Principles:

   - Multiple objectives within 1 large network (e.g. subgroup of health care providers takes samples and provides more detailed clinical information)

   - Include both samples to be tested and test results

   - Making use of technical achievements (data extraction, linking …)

   - Get sentinel surveillance data on national electronic Health Data platform, in order to make data linkable to other health registries, respecting information security principles

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Surveillances to integrate

Existing sentinel surveillances	New COVID-19 surveillances (voluntarily)

Sentinel network of GPs
 	
    Questionnaire-based data collection on ILI and ARI related GP consultations
	GP Barometer
	
	    Semi-automatic extraction of data on GP contacts for COVID-19 and respiratory infections

Sentinel network of hospitals
 	
    Questionnaire-based data collection on SARI hospital admissions
	Clinical hospital surveillance
	
	    Based on SARI surveillance
	
	    Questionnaire-based data collection on hospitalized confirmed COVID-19 patients

Sentinel network of nursing homes
 	
    Questionnaire-based data collection on ILI infections in nursing home residents
	Exhaustive nursing home surveillance
	
	    Questionnaire-based data collection on confirmed COVID-19 infections in nursing home residents

WGS results from the sentinel surveillances	National genomic surveillance of SARS-CoV-2 (including basic and targeted surveillance)

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3. Integrating the existing sentinel networks and non-sentinel COVID-19 surveillances : Activities

- Implement new data extraction and upload methods to the "old" surveillances
- Find common way of case finding
  - Inventorize ways of actual case finding (lab-based, symptom based, …?) in hospital patients
  - Assess the degree of overlap in reported patients
- Align case definitions:
  - Asses predictive value of symptoms (individually and clusters) on confirmation , by pathogen and in the different settings
  - relate those symptoms to codes in the patient records
- Comparison of WGS results from the sentinel surveillances to those of the national genomic surveillance: timeliness, relation to severity
- Integrated reporting of respiratory viruses to ECDC speeds up the process!

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Sentinel networks of GPs, nursing homes and hospitals
GP Barometer network
Clinical COVID-19 hospital surveillance
COVID-19 Nursing Home surveillance

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